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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LEE, BENNY T

ART UNIT PAPER NUMBER

2817

DATE MAILED: 02/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



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	4

DATE MAILED:

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

shortened statutory period for response to this action is set to expire Three (3) month(s), _____ date from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

art I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS APPLICATION

- | | |
|--|---|
| <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | <input type="checkbox"/> Notice re Patent Drawing, PTO-948. |
| <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1440 | <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-1441 |
| <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474 | <input type="checkbox"/> _____ |

art II SUMMARY OF ACTION

1. ☒ Claims 1-10, renumbered 11-20 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1-9; 10, 11, 12 (renumbered); 13-17 (renumbered) are rejected.
5. ☒ Claims 18-20 renumbered are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings which are acceptable for examination purposes until such time as allowable subject matter is indicated.
8. ☐ Allowable subject matter having been indicated, formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. These drawings are: ☐ acceptable; ☐ not acceptable (see explanation).
10. ☐ The ☐ proposed drawing correction and/or the ☐ proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved. ☐ disapproved (see explanation). However, the Patent and Trademark Office no longer makes drawing changes. It is now applicant's responsibility to ensure that the drawings are corrected. Corrections MUST be effected in accordance with the instructions set forth on the attached letter "INFORMATION ON HOW TO EFFECT DRAWING CHANGES", PTO-1474.
12. ☐ Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received
☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 O.D. 11; 453 O.G. 213.
14. ☐ Other

SN 976569

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The disclosure is objected to because of the following informalities: Page 5, last line and page 11, line 15, note that "3d" should be rewritten as --3-D--. Page 7, line 1, note that --(not shown)-- should follow "11"; line 2, note that --(not depicted in Fig. 2)-- should follow "22"; line 15, note that --(see Fig. 1)-- should follow "28"; line 26, note that "Fig. 1" should correctly be -- Fig. 2--; line 31, note that "pads 6" should correctly be --pads 5--.

Appropriate correction is required.

The disclosure is objected to because of the following informalities: Note that the following reference labels need to be explicitly described with respect to the corresponding drawing description: fig. 1 (29, 39, 50); fig. 2 (12, 14); figs. 3, 4 (26, 28, 34); fig. 3 (39); fig. 4 (1, 24, 30); fig. 5, all reference labels except (24, 28', 28", 32).

Appropriate correction is required.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the embodiment wherein elements (e.g patch antenna, conductive trace, etc) are disposed within the substrate layer must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are

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canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 12-21 have been renumbered 11-20.

Claims 2, 4, 14 (renumbered) are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 2, 14 (renumbered), note that “to at least said ...” appears to be an incomplete recitation since it is unclear what else besides ^{the} closed loop ground ring strip is encompassed by the “at least” recitation?
^

In claim 4, note that the recitation of “said ground plane extends to overlie ...” is not definite if both the ground plane and conductive trace are on the same surface. Clarification is needed.

The following claims have been found objectionable for reasons set forth below:

In claims 1, 10, 13 note that “forming” should be rewritten as --defining--.

In claims 3, 6, 9, 12, 15, 20, note that “formed” should be rewritten as --disposed--.

In claims 7, 9, 10, 12, 13, 15, 18, 20, note that “substrate layer’s (first/second) major surface” should be rephrased as --(first/second) major surface of the substrate layer-- at all appropriate occurrences for clarity.

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5, 7, 8; 10, 11 (renumbered) are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Crochet.

Crochet (fig. 3b) discloses an electrical coupling structure comprising a substrate (7) having first and second opposing surfaces. A conductive ground ring layer (9) is disposed on the first substrate surface and defining a loop-shaped open area. A conductive patch (5) is disposed within the open area is separated from the surrounding conductive ring layer by a gap or “diaphragm” which provides a capacitance between the patch and ring layers. A feed line (6) is attached to the conductive patch. A ground plane (8) is disposed on the opposite surface of the substrate and is electrically coupled to the ground ring. Note from fig. 4 that the electrical coupling structure is attached to the end of a waveguide (3) such that conductive patch (5) couples electromagnetic energy to/from the waveguide. Moreover, note that the end walls of the waveguide attaches to the conductive ground ring layer (9).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

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to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3, 4, 9, 12 (renumbered); 13-17 (renumbered) are rejected under 35 U.S.C. 103(a) as being unpatentable over Crochet.

Crochet discloses the claimed invention except for a feed line conductor disposed on the second substrate surface and connected by a via through the substrate to connect with the conductive patch.

Note from fig. 3c that a feed line (6) is disposed on the second substrate surface and is connected to the conductive patch through a via (10) passing through the substrate.

Accordingly, it would have been obvious in view of the teachings in Crochet to have modified the feed line (6) in Fig. 3b by the alternative yet equivalent feed line (6) with the via (10) as taught in Fig. 3c. Such a modification would have been considered an obvious substitution of art recognized equivalent feed line arrangement which would not have altered the signal feeding function thereof, thereby suggesting the obviousness of such a modification.

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Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Crochet in view of Wei.

Crochet meets the claimed invention except for the ground plane and ground ring electrically connected by vias.

Wei discloses a waveguide coupling arrangement having a ground ring (C1) on a surface of a board (B1). Note that the ground ring includes a plurality of vias connected to a ground plane on an opposite surface of board (B1).

Accordingly, it would have been obvious in view of the references, taken as a whole, to have added grounding vias between grounding ring layer (9) and ground plane (8) in Crochet. Such a modification would have provided the advantageous benefit of improved shielding isolation to ground, thereby suggesting the obviousness of such a modification.

Any inquiry concerning this communication should be directed to Benny Lee at telephone number 308-4902.

BENNY T. LEE
PRIMARY EXAMINER
ART UNIT 2817
Lee/ek

02/20/03